



The question of the definition and delimitation of outer space: Perspectives on governance and space traffic management

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INTRODUCTION

- **Space Law** constitutes the set of rules governing humankind's activities in a certain domain: **outer space**;
- A legal frontier, still undelimited, exists between the territorial **air space**, **under national control and jurisdiction**, and **outer space**, where no claim of sovereignty is authorized;
- The delimitation of the frontier between air space and outer space still awaits a multilateral decision;
- As **technology advances**, blurring the differences between aeronautics and astronautics, the decades old delimitation question gains **renewed relevance**:
 - Current concerns: *suborbital flights, near-space activities, military uses of outer space and space traffic management*;

TERRITORIAL PRINCIPLE

- The delimitation of outer space brings up considerations about the **vertical limit of State sovereignty**, *i.e.*, the exclusive and independent power of a State in relation to a population in a **certain area**;
- Complete State jurisdiction is circumscribed within delimited borders, established in accordance with international law;
 - “A State **may not** exercise its power in any form in the territory of another State” (Lotus Case, PCIJ - 1927);
- **UN Charter, art. 2, para. 4**: all Members shall refrain from the threat or use of force against the **territorial integrity** or political independence of any State;
- **Without duly accorded borders**, especially regarding strategic locations, **the risk of international disputes rises**:
“Frontiers are indeed the **razor’s edge** on which hung suspended the modern issues of **war and peace**” (CURZON)

THE ELLUSIVE FRONTIER

- Outer space constitutes a domain to which all nations have access but to which none has the right to claim **sovereignty** – Articles I and II, Outer Space Treaty;
- On the other hand, **States have complete and exclusive sovereignty over the airspace above its territory** – Article I, Chicago Convention;
- Thus, **Space Law** and **Air Law** are based on **different international legal regimes**, as far as State sovereignty is concerned;
- Contradictory reality: *outer space constitutes the **vertical frontier** of national territories, which, even though finite, extend themselves above the surface of the Earth up to an **undetermined altitude***;

MULTILATERAL DEBATES

- The definition and delimitation of outer space has been discussed, for many decades, at the **UNCOPUOS Legal Subcommittee**:
 - In 1966, the topic *“matters relating to the definition and delimitation of outer space”* was included in the agenda, through a French proposal, and still remains under discussion;
 - A specific **Working Group on Definition and Delimitation of Outer Space** has been established;
 - **Never-ending dispute: FUNCTIONALISTS X SPATIALISTS;**
 - *Deadlock hampers agreement, even for the removal of the topic from the agenda;*

FUNCTIONALISTS

- Reasoning: delimitation of outer space is either **unnecessary** or even ***impossible***;
- Justification: **no problems up to now**;
- **Applicable legal regime** would depend on the nature of the activity, *not where it effectively takes place*;
- Dilemma: **definition of “space activity” is also yet to be accorded multilaterally**;
- Consequence: *arguably*, space launches and reentries would **never disrespect** the territorial integrity of foreign nations, since ***passage rights would always be granted***;
- Additionally, the lack of regulation may offer more flexibility to major space faring nations: “*you can’t break a law that does not exist*” (Thomas Gangale);

SPATIALISTS

- Reasoning: the delimitation of the frontier between air space and outer space is **legally necessary and relevant**;
 - Throughout the years, many proposals have been presented, following ***different legal or technical criteria***, including: effective control, atmospheric limit, lowest orbital perigee, *mesospace* and arbitrary delimitation;
- Problem: if set **too low**, delimitation could undermine **territorial sovereignty**; if set **too high**, relevant orbital positions may be affected;
- Although most COPUOS member States may be regarded as spatialists, **there is still no consensus** regarding a single delimitation standard;

UNILATERAL DELIMITATION

- The absence of a multilateral solution consequently authorizes the *unilateral delimitation of the frontier between air and outer space*, through domestic legislation;
- Comparative approach indicates lack of a legislative pattern, leaning towards local interests:
 - **Kazakhstan and Denmark:** 100 km (2012 and 2016);
 - **Belarus:** 20.1 km (1998);
 - **Austria:** place at which aircrafts can no longer operate by aerodynamic lift but only according to Kepler's laws (2010);
 - **Ecuador:** sovereignty over geostationary orbit (2008);
- **Without an universal delimitation**, it seems reasonable to foresee a complex scenario whereby *the border between national air space and outer space may differ from one country to another*;

CONCLUDING REMARKS

- **Space traffic management (STM)** comprises means and rules to access, conduct activities in, and return from outer space *safely, sustainably and securely* (EU, 2021);
- STM would benefit from *proper identification of where outer space begins*;
- The Earth's orbital space environment is a **finite resource**, subject to specific dangers;
- **International cooperation** is required to balance *different perspectives* and support responsible behaviors in space;
- Therefore, **it is hereby supported the delimitation of outer space**, through multilateral negotiations, considering **STM mechanisms** and **regulating passage rights** for the launching and return of space objects.

Any Questions?

Thank you!

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